

CLAIMS

What is claimed is:

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By*

5 1. A chest compression apparatus comprising
a mechanism for applying a force to the thoracic region of a person, the
mechanism comprising a bladder for receiving pressurized air, and
b) a mechanism comprising a fan valve for supplying pressure pulses of pressurized
air to the bladder, wherein the pulses having a substantially sinusoidal wave form.

2. An apparatus according to claim 1 further comprising a mechanism for venting
the pressurized air from the bladder.

3. An apparatus according to claim 1 wherein the apparatus comprises a plurality of
components, including an air flow generator component, a pulse frequency control component, a
pressure control component, and a patient vest, wherein the pulse frequency control and pressure
control components can, independently, be used by the patient and/or can be preset and
determined by the manufacturer or physician so as to deliver compression pulses having
substantially sinusoidal wave forms.

15 4. A chest compression apparatus according to claim 1, comprising:
a) an air flow generator component adapted to provide a continuous stream of
pressurized air,
20 b) a pulse frequency control component in flowable communication with the air flow
generator and comprising a fan valve adapted to periodically interrupt the air stream in order to
provide pulses having a substantially sinusoidal wave form, and

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c) a patient vest adapted to be worn by a user in order to receive the pulses in the form of corresponding force applied to the thoracic region.

5. An apparatus according to claim 4 further comprising a pressure control component in flowable communication with the pulse frequency control component and adapted to permit a user to control the pressure of the pulses.

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6. An apparatus according to claim 4 wherein the apparatus is provided in the form of a plurality of portable modules having a combined weight of about 20 pounds or less.

7. An apparatus according to claim 6 wherein the apparatus modules have a combined weight of 15 pounds or less.

8. An apparatus according to claim 1 wherein the apparatus provides a maximum pressure of about 60 mm Hg or less.

9. An apparatus according to claim 1 wherein the fan valve is used to establish and determine the rate and duration of air pulses entering the bladder.

10. A chest compression apparatus comprising

15 a) a mechanism for applying a force to the thoracic region of a person, the mechanism comprising a bladder for receiving pressurized air, and

b) a mechanism comprising a fan valve for supplying pressure pulses of pressurized air to the bladder, wherein the pulses having a substantially sinusoidal wave form,

c) and a mechanism for venting the pressurized air from the bladder,

20 wherein the apparatus is provided in the form of a plurality of portable modules having a combined weight of about 20 pounds or less and provides a maximum pressure of about 60 mm Hg or less.

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11. A method of applying a force to the thoracic region of a person comprising the steps of providing and using an apparatus according to claim 1.

12. A method of making a chest compression apparatus, comprising the steps of providing and/or combining:

5 a) a mechanism for applying a force to the thoracic region of a person, the mechanism comprising a bladder for receiving pressurized air, and

 b) a mechanism comprising a fan valve for supplying pressure pulses of pressurized air to the bladder, wherein the pulses having a substantially sinusoidal wave form,

 c) and a mechanism for venting the pressurized air from the bladder.

13. An apparatus according to claim 1 further comprising a mechanism for venting the pressurized air from the bladder, wherein the apparatus comprises a plurality of components, including an air flow generator component, a pulse frequency control component, a pressure control component, and a patient vest, wherein the pulse frequency control and pressure control components can, independently, be used by the patient and/or can be preset and determined by the manufacturer or physician so as to deliver compression pulses having substantially sinusoidal wave forms.

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14. A chest compression apparatus according to claim 13, comprising:

 a) an air flow generator component adapted to provide a continuous stream of pressurized air,

20 b) a pulse frequency control component in flowable communication with the air flow generator and comprising a fan valve adapted to periodically interrupt the air stream in order to provide pulses having a substantially sinusoidal wave form, and

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c) a patient vest adapted to be worn by a user in order to receive the pulses in the form of corresponding force applied to the thoracic region.

15. An apparatus according to claim 14 further comprising a pressure control component in flowable communication with the pulse frequency control component and adapted to permit a user to control the pressure of the pulses.

16. An apparatus according to claim 15 wherein the apparatus modules have a combined weight of 15 pounds or less and the apparatus provides a maximum pressure of about 60 mm Hg or less.

17. An apparatus according to claim 16 wherein the fan valve is used to establish and determine the rate and duration of air pulses entering the bladder.

18. A method of applying a force to the thoracic region of a person comprising the steps of providing and using an apparatus according to claim 13.

19. A method according to claim 18 wherein the apparatus modules have a combined weight of 15 pounds or less and the apparatus provides a maximum pressure of about 60 mm Hg or less.

20. A method according to claim 19 wherein the fan valve is used to establish and determine the rate and duration of air pulses entering the bladder.